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Secret

DIRECTORATE OF
INTELLIGENCE

Imagery Analysis Report

Engineering Dimensions of the Guideline Mod 4 Missile

Secret

Declass Review by NIMA/DOD

DDI/IAR 91002
DATE Jul 68

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WARNING

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ENGINEERING DIMENSIONS OF THE GUIDELINE

MOD 4 MISSILE

INTRODUCTION

In the November 1967 Moscow Parade, the Soviets displayed a new version of the Guideline missile. The missile is substantially different than previous models, and has been designated Guideline Mod 4.

This report presents detailed dimensions for Guideline Mod 4, a description of the configuration, and a brief description of the NPIC Metrical Trap program and the Motion and Shape mensuration reduction procedures on which the dimensions are based.

MENSURATION

The mensuration in this report contains sufficient detail to permit construction of engineering models of the missile. Overall dimensions are shown in Figures 3 and 4. Individual components have been annotated with a circled number indicating the subsequent Figure where detailed dimensions are shown for that component. The locations of all weld seams which could be identified are shown in Figure 4.

Mensuration is not presented for the external hatches on the missile. Although the locations shown are considered accurate, there was not sufficient photography, particularly of the left side of the missile, to determine the complete configuration of many hatches or even to insure that all hatches were identified.

CONFIGURATION

The overall appearance of Guideline Mod 4 differs considerably from that of previous Guidelines. Certain sections of this missile, however, are very similar, if not identical, to the external appearance of Guideline Mod 3.

The mod 4 missile is 37.34 feet in length, compared to 35.41 feet for the Mod 3 and 34.84 feet for the Mod 1/2. The body diameter is 1.642 feet, the same as for previous models.

The booster seen on Guideline Mod 4 is the same size and appears very similar to the booster seen on the Mod 3 missile. The aft end of the sustainer, including the thrust structure and the area forward to the control surfaces, is very similar in size and appearance to that of the Mod 3 missile. The external piping and fairings are also placed similarly.

There are major differences in configuration forward of the control surfaces. The Mod 4 missile has no canard surfaces, a feature that is characteristic of all previous models. It has a large, slightly bulbous nose section which is wrapped or coated with white material, possibly fiberglass or a similar substance. The linear antennas located forward of the wings on Guideline Mod 3 are not present on the Mod 4 missile.

The sustainer main wings on Guideline Mod 4 are of considerable interest. The wings are larger than those of Mod 3 and are asymmetrical in configuration, although they are set in a cruciform pattern. The two upper wings, as the missile rests of the transporter, have a shorter span and a longer tip chord than the two lower wings (compare Figures 7 and 8). The root chord is the same length for all four wings.

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REFERENCES

[redacted]

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Requirement

C-SI7-84,853

IAS Project

050063 (31298-8)

INSTALLATION OR ACTIVITY NAME	COUNTRY	UTM COORDINATES	GEOGRAPHIC COORDINATES
Engineering Dimensions of the Guideline Mod 4 Missile	USSR	N/A	N/A

CATEGORY	BE NUMBER	COMIREX NO.	NIETB NO.
N/A	N/A	N/A	N/A

MAP REFERENCE

N/A

LATEST IMAGERY USED	NEGATION DATE (IF REQUIRED)
Moscow Parade Photography, November 1967	N/A

NOTE: This report was prepared in direct support of the Central Intelligence Agency. By agreement with USAIIC it will serve as an Interim Basic Imagery Interpretation Report.

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FIGURE 1. SELECTED VIEWS OF GUIDELINE MOD 4.

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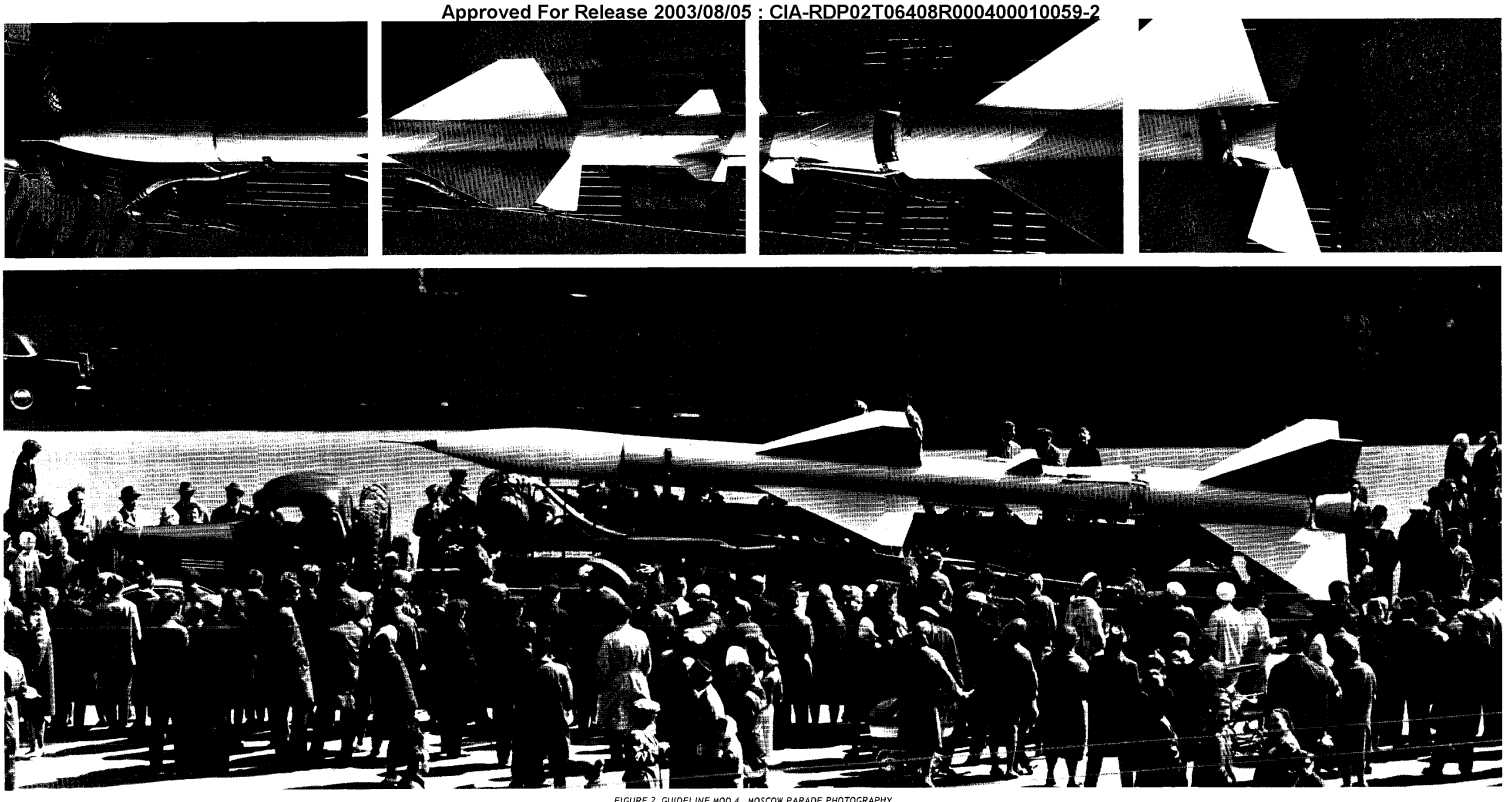

FIGURE 2. GUIDELINE MOD 4 MOSCOW PARADE PHOTOGRAPHY

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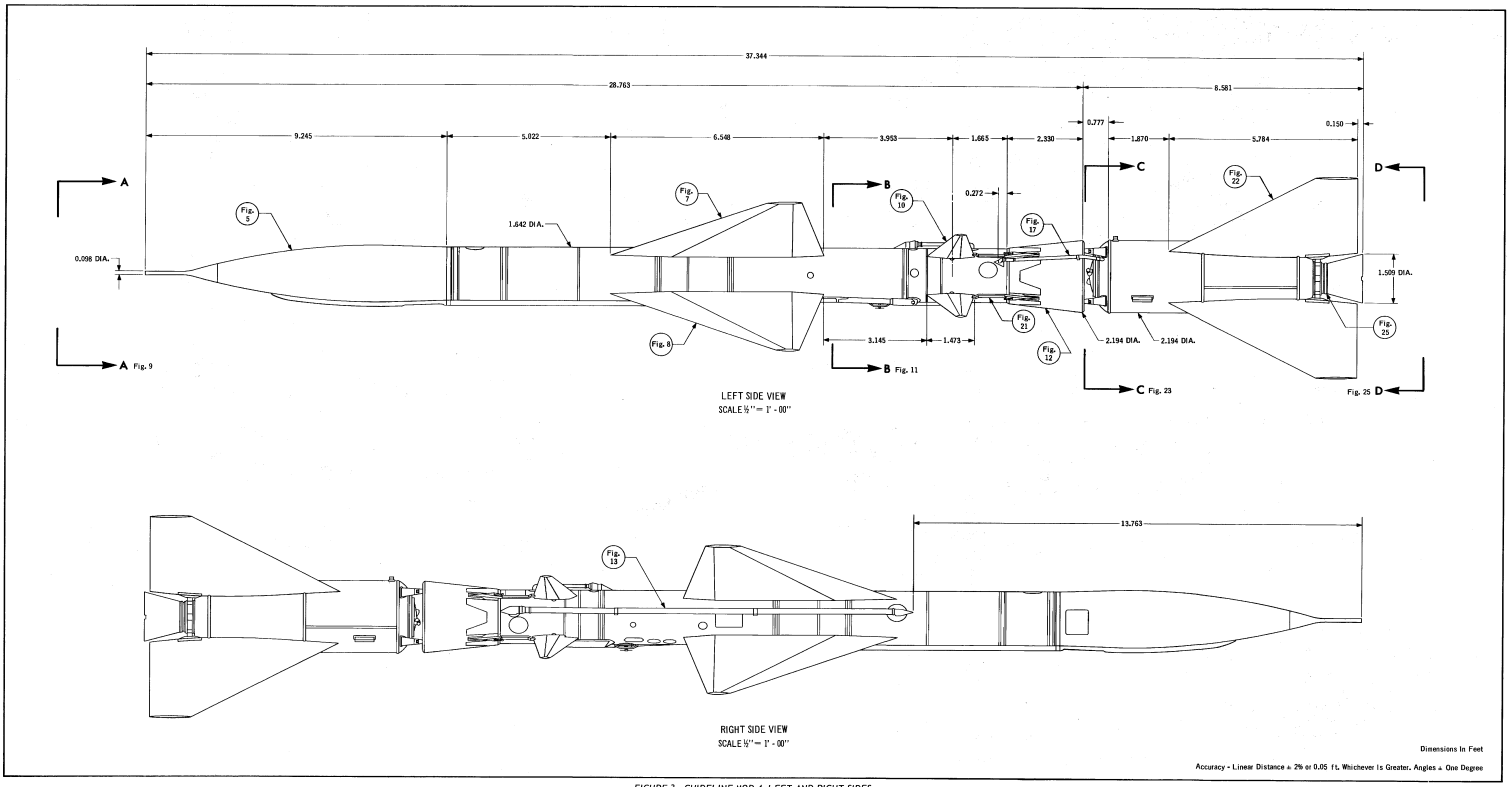

FIGURE 3. GUIDELINE MOD 4, LEFT AND RIGHT SIDES.

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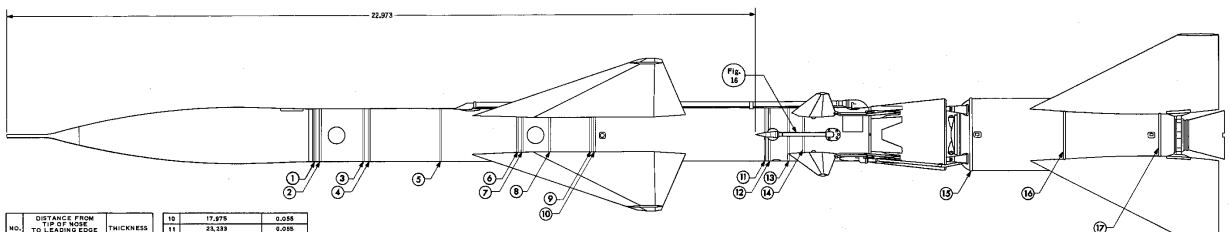
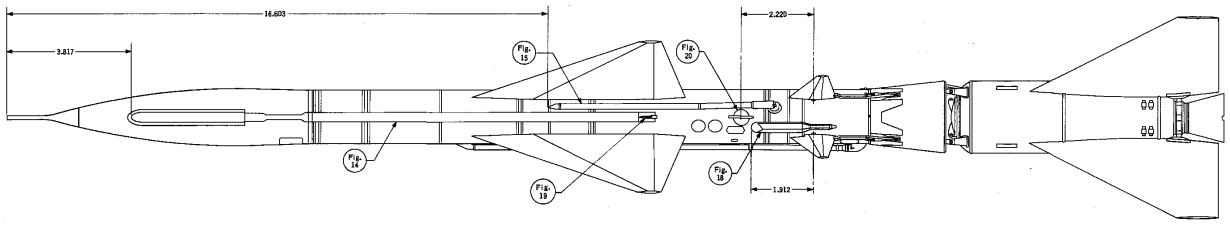


NO.	DISTANCE FROM TIP OF NOSE TO LEADING EDGE OF WELD SEAM.	THICKNESS
1	9.389	0.054
2	9.393	0.054
3	10.979	0.054
4	11.042	0.054
5	13.245	0.048
6	15.623	0.035
7	15.755	0.035
8	16.805	0.042
9	17.855	0.055
10	17.975	0.055
11	23.139	0.035
12	23.273	0.035
13	23.973	0.035
14	24.408	0.055
	DISTANCE FROM REAREND OF SUSTAINER TO LEADING EDGE OF WELD SEAM	
15	0.777	0.065
16	3.634	0.065
17	5.566	0.065

TOP VIEW
SCALE ½" = 1' - 00"



BOTTOM VIEW
SCALE ½" = 1' - 00"

Dimensions in Feet

Accuracy - Linear Distance ± 2% or 0.05 ft. Whichever is Greater. Angles ± One Degree.

FIGURE 1. SHRIKE MOD 4 - TOP AND BOTTOM VIEWS

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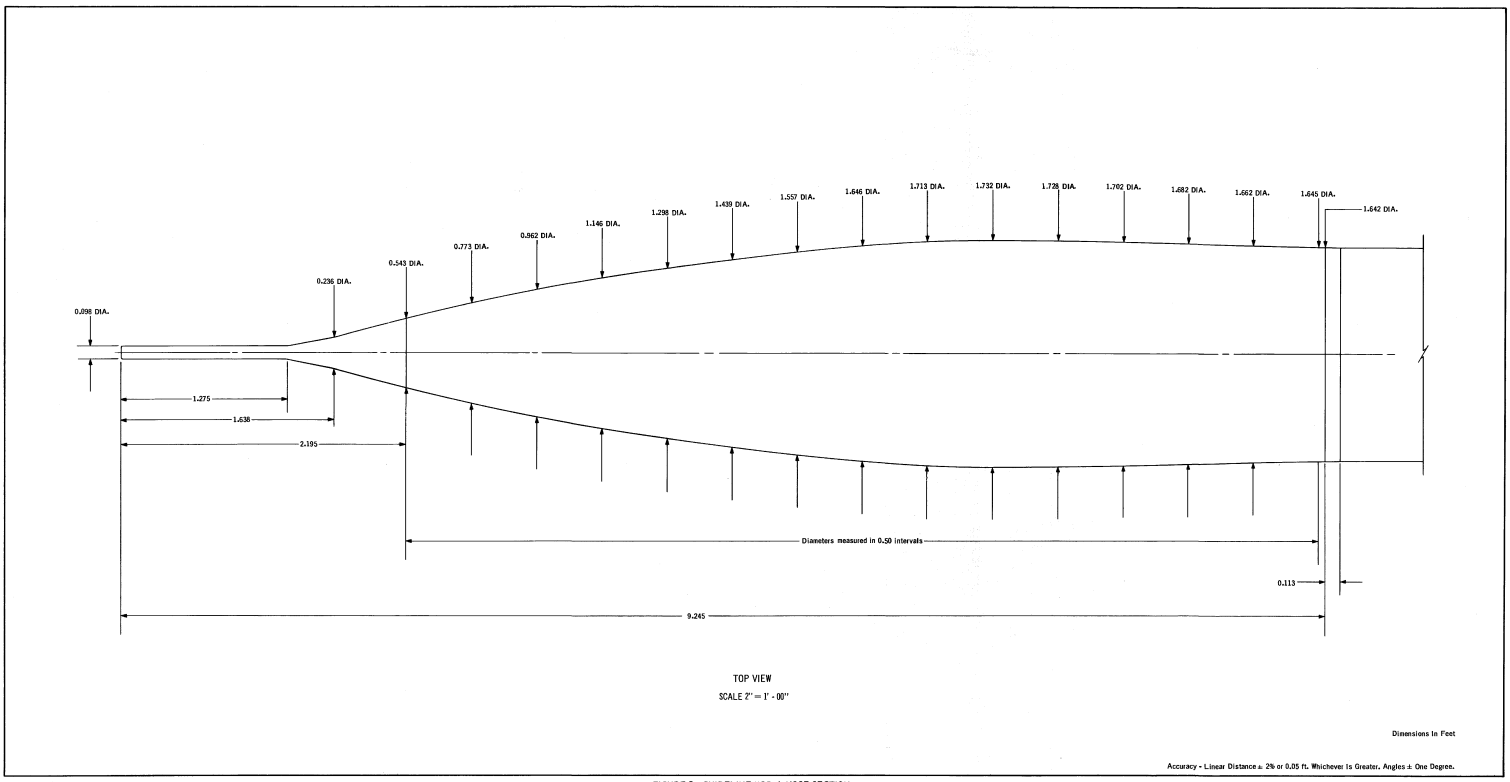

FIGURE 5. GUIDELINE MOD 4, NOSE SECTION.

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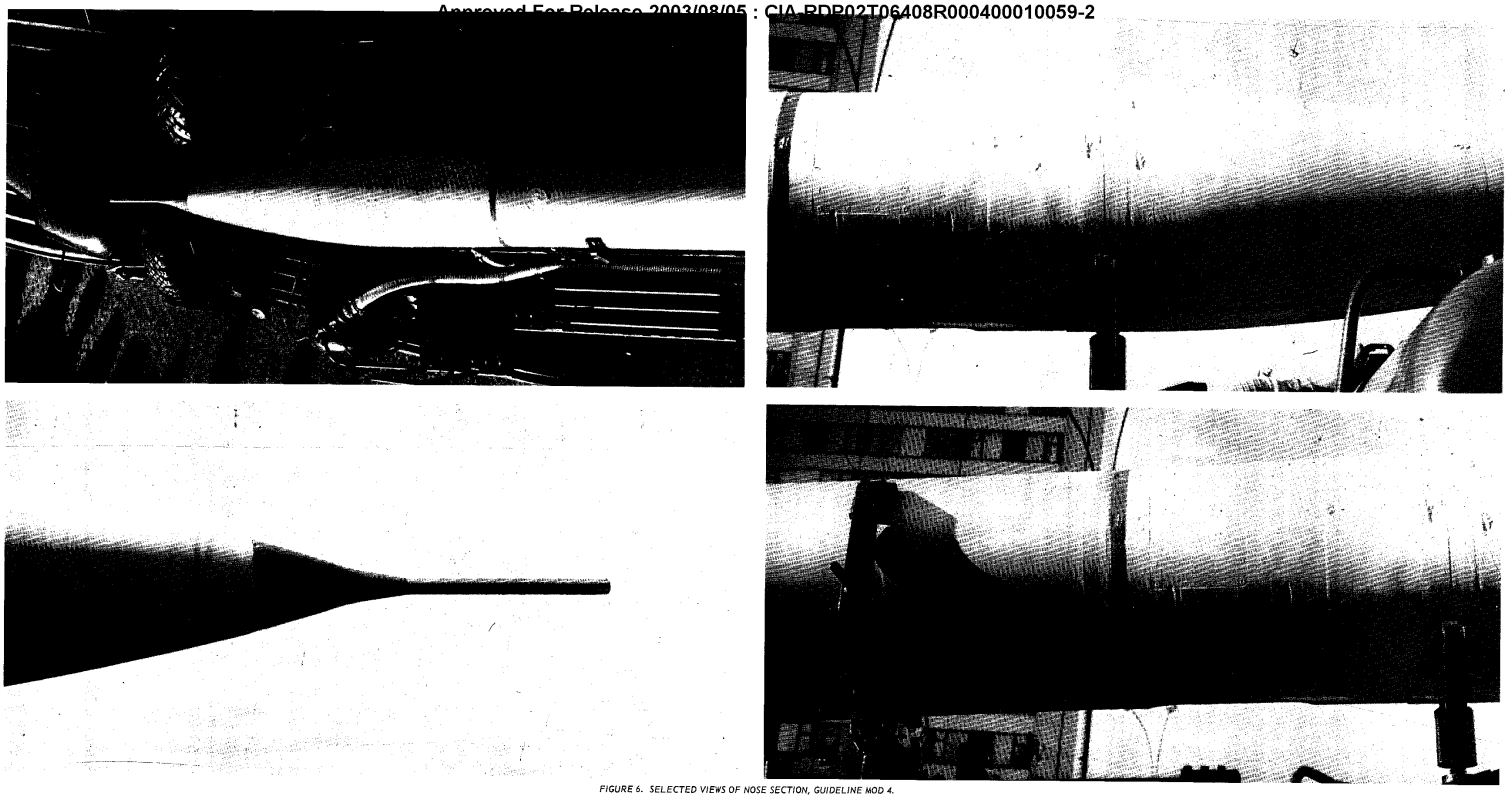

FIGURE 6. SELECTED VIEWS OF NOSE SECTION, GUIDELINE MOD 4.

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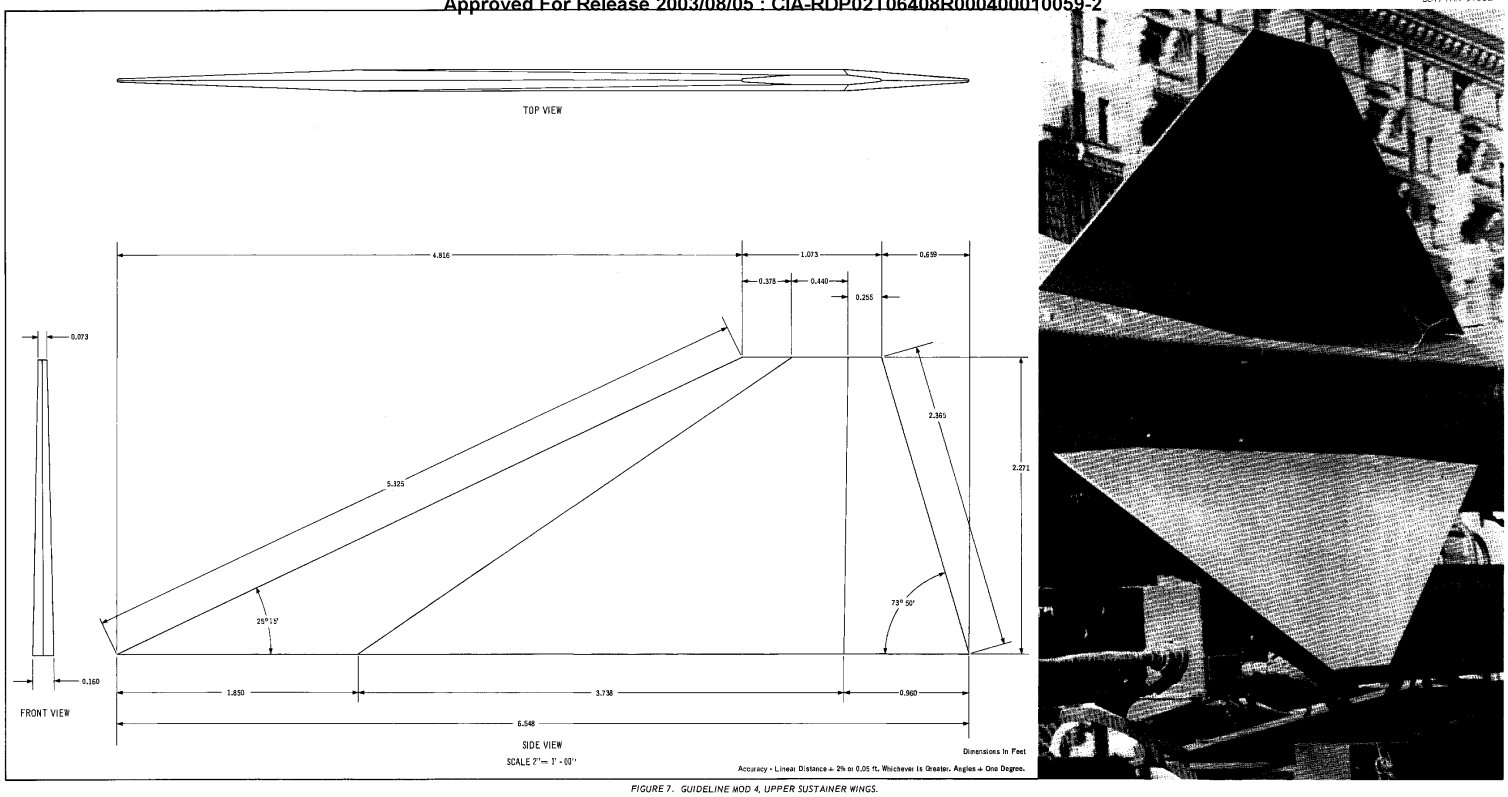

FIGURE 7. GUIDELINE MOD 4, UPPER SUSTAINER WINGS.

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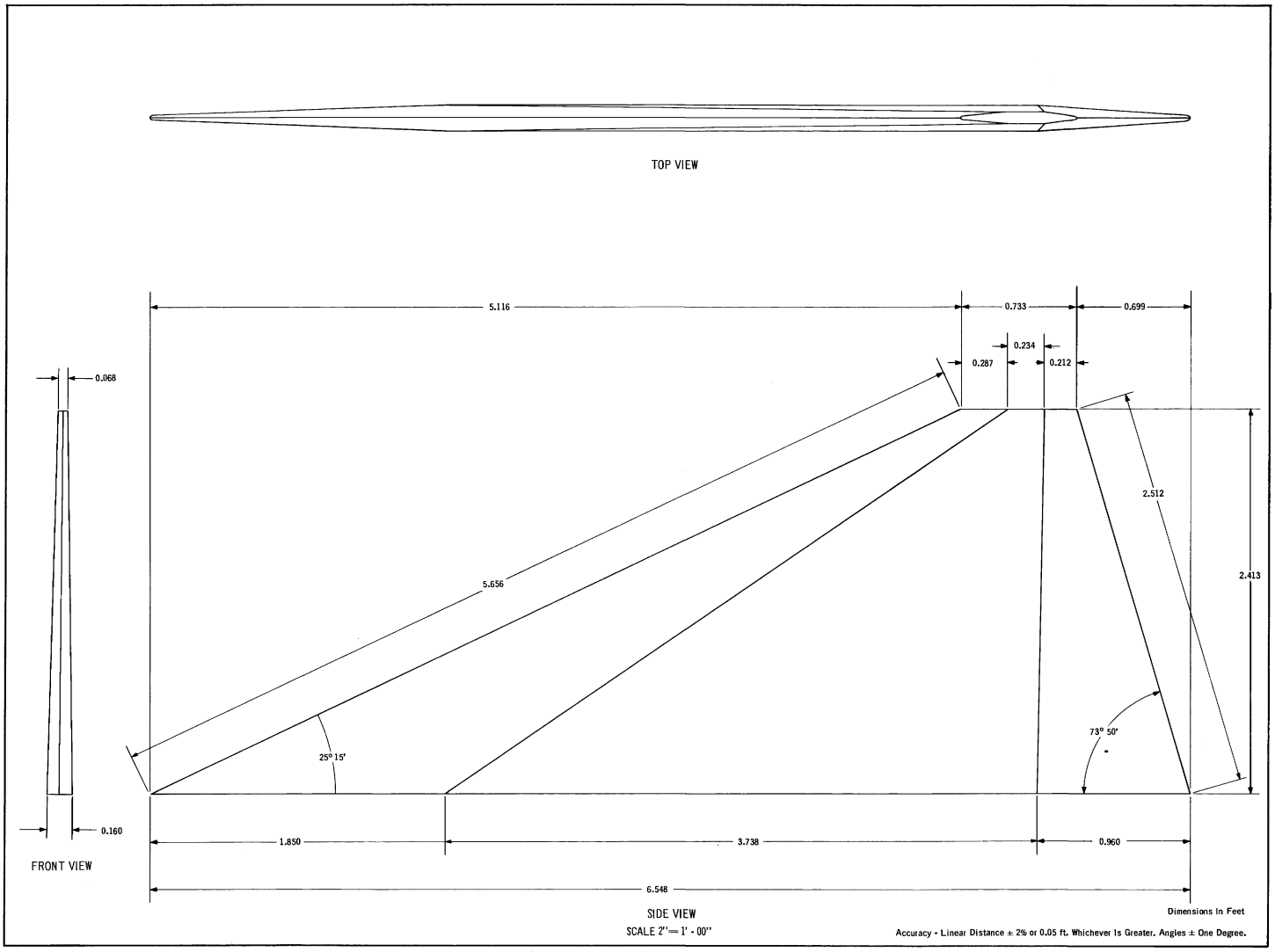

FIGURE 8. GUIDELINE MOD 4. LOWER SUSTAINER WINGS.

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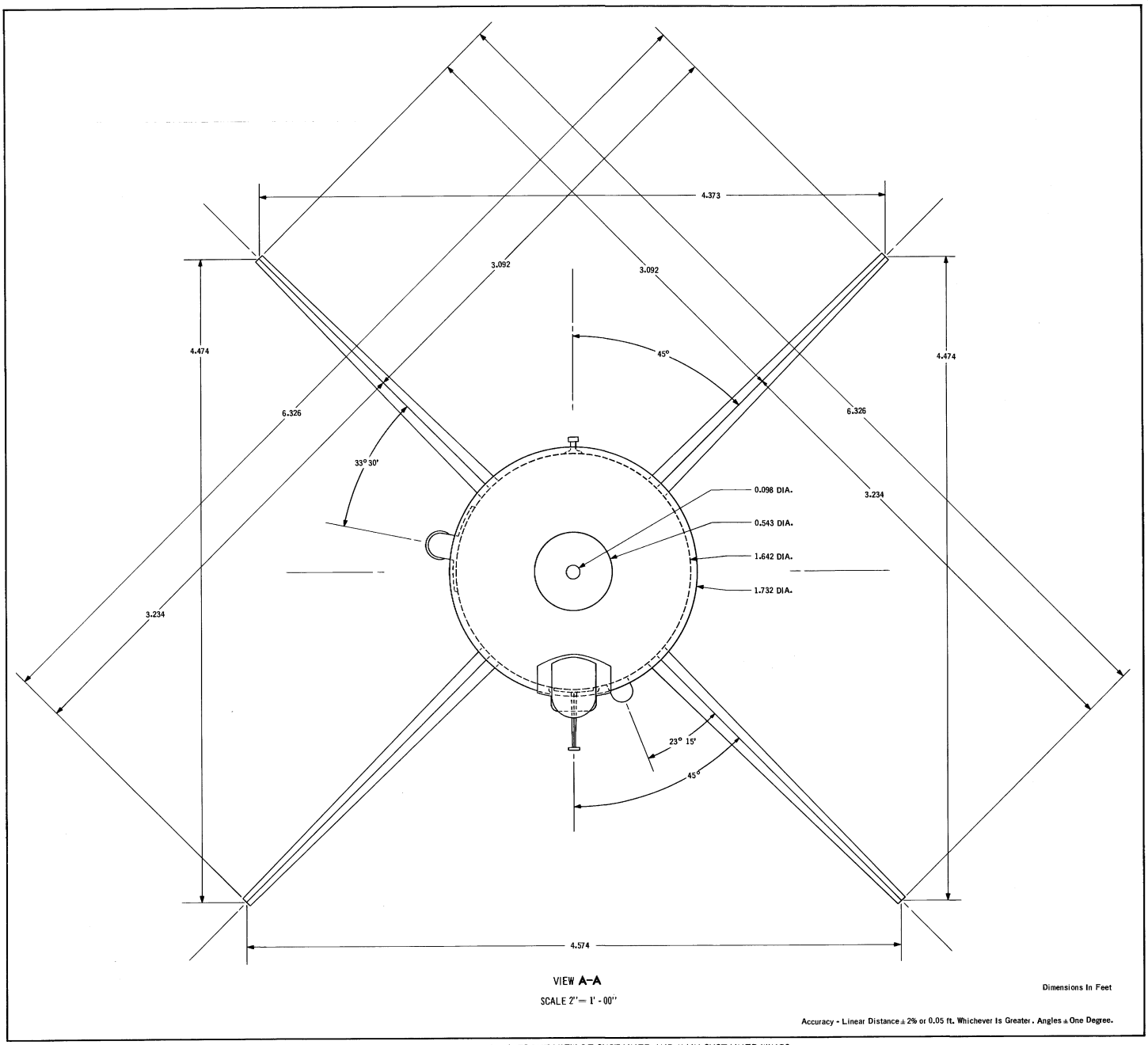

FIGURE 9. GUIDELINE MOD 4, FRONT VIEW OF SUSTAINER AND MAIN SUSTAINER WINGS.

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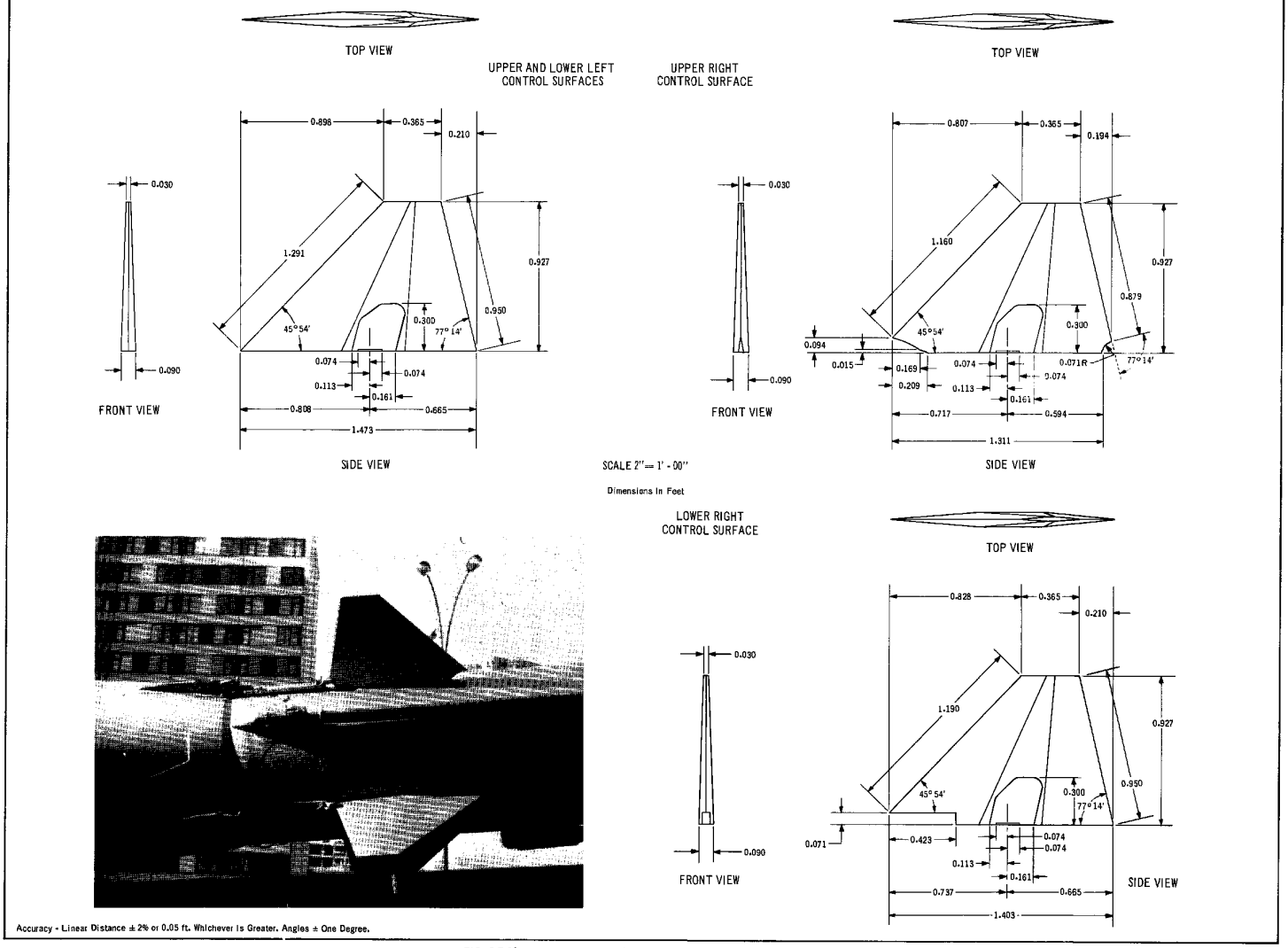

FIGURE 10. GUIDELINE MOD 4, SUSTAINER CONTROL SURFACES.

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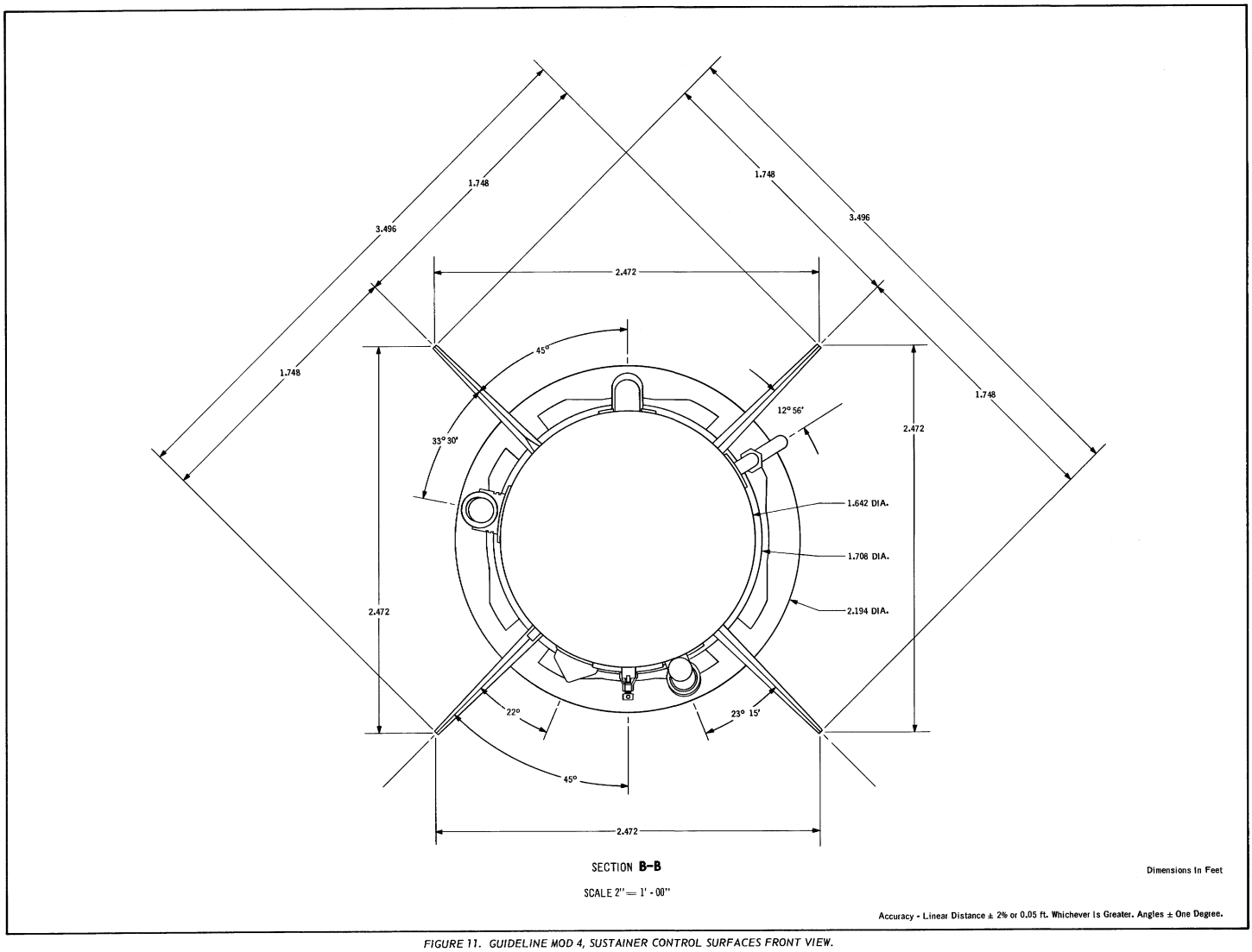

FIGURE 11. GUIDELINE MOD 4, SUSTAINER CONTROL SURFACES FRONT VIEW.

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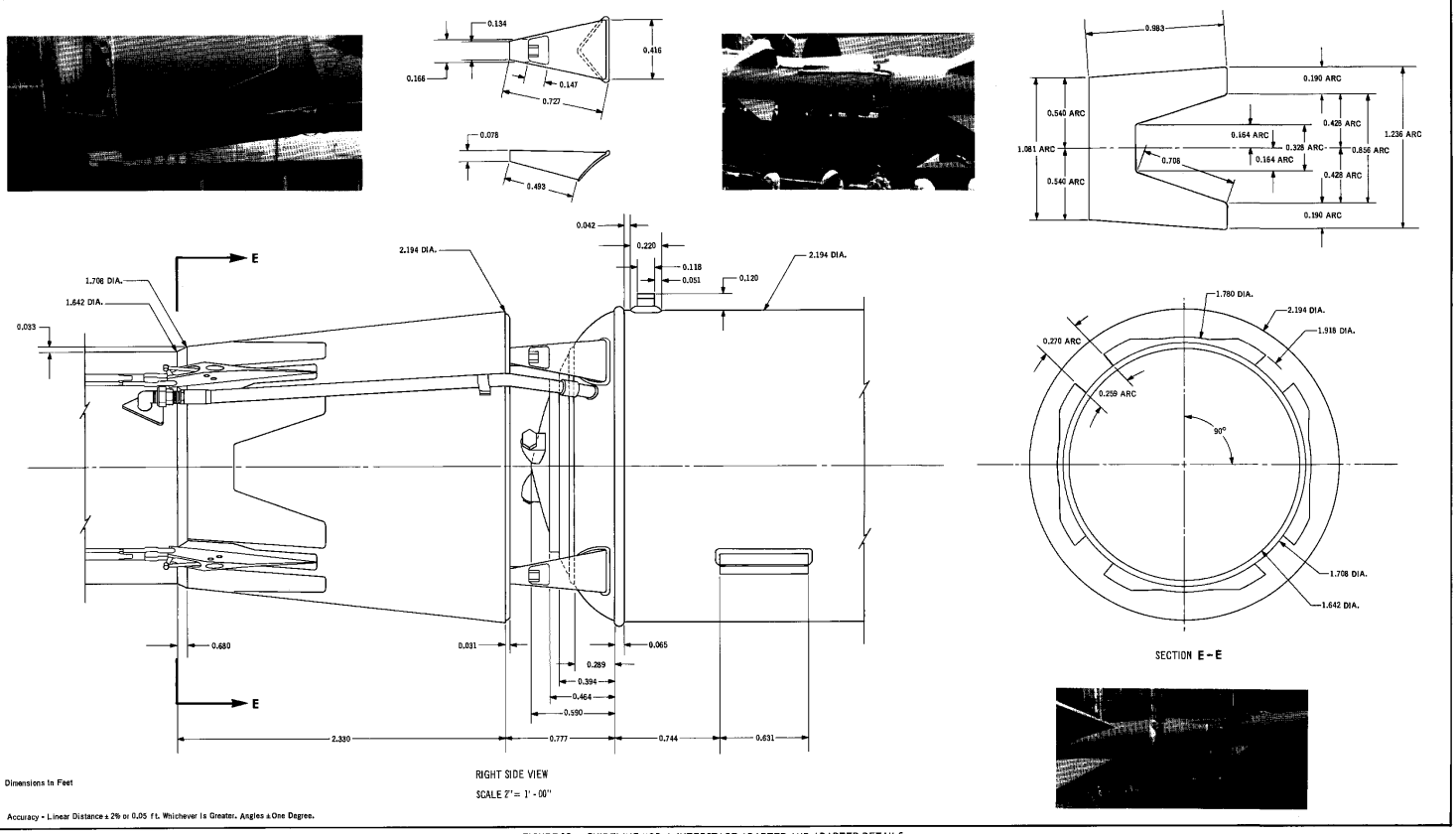

FIGURE 12. GUIDELINE MOD 4, INTERSTAGE ADAPTER AND ADAPTER DETAILS.

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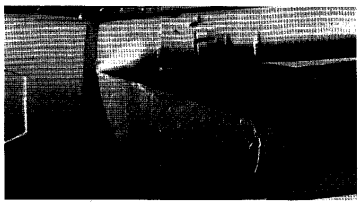
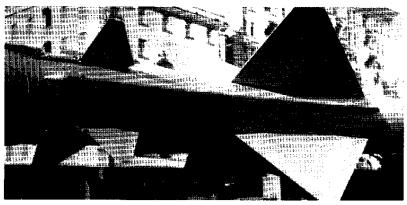
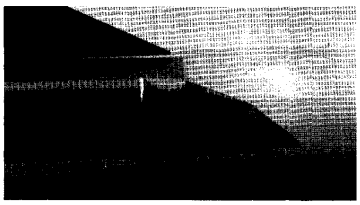
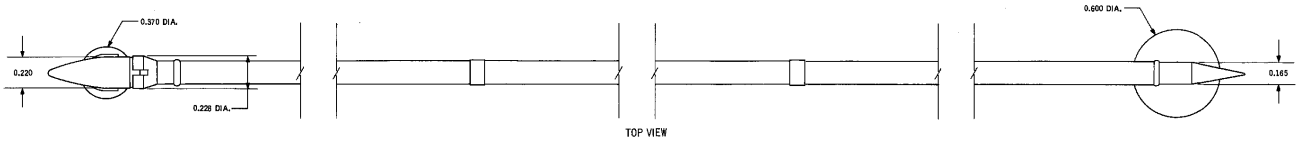
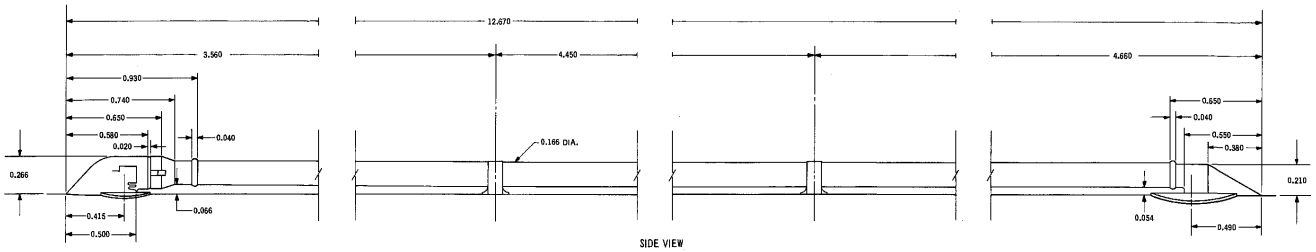








TOP VIEW



SIDE VIEW
SCALE 2" = 1' - 00"

Dimensions in Feet

Accuracy - Linear Distance± 2% or 0.05 ft. Whichever Is Greater. Angles= One Degree.

FIGURE 13- GUIDELINE MOD 4, PROBABLE OXIDIZER LINE.

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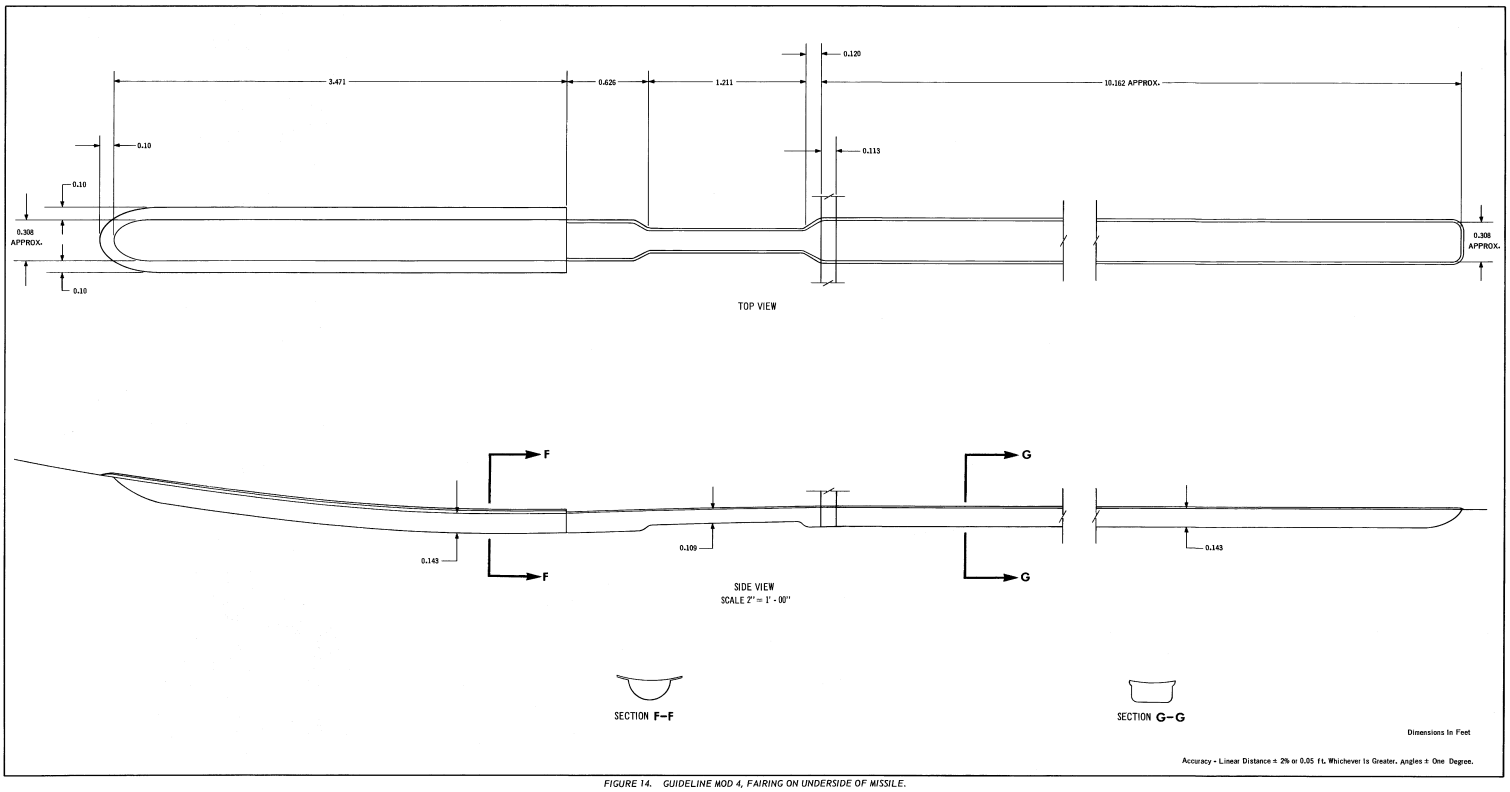

FIGURE 14. GUIDELINE MOD 4, FAIRING ON UNDERSIDE OF MISSILE.

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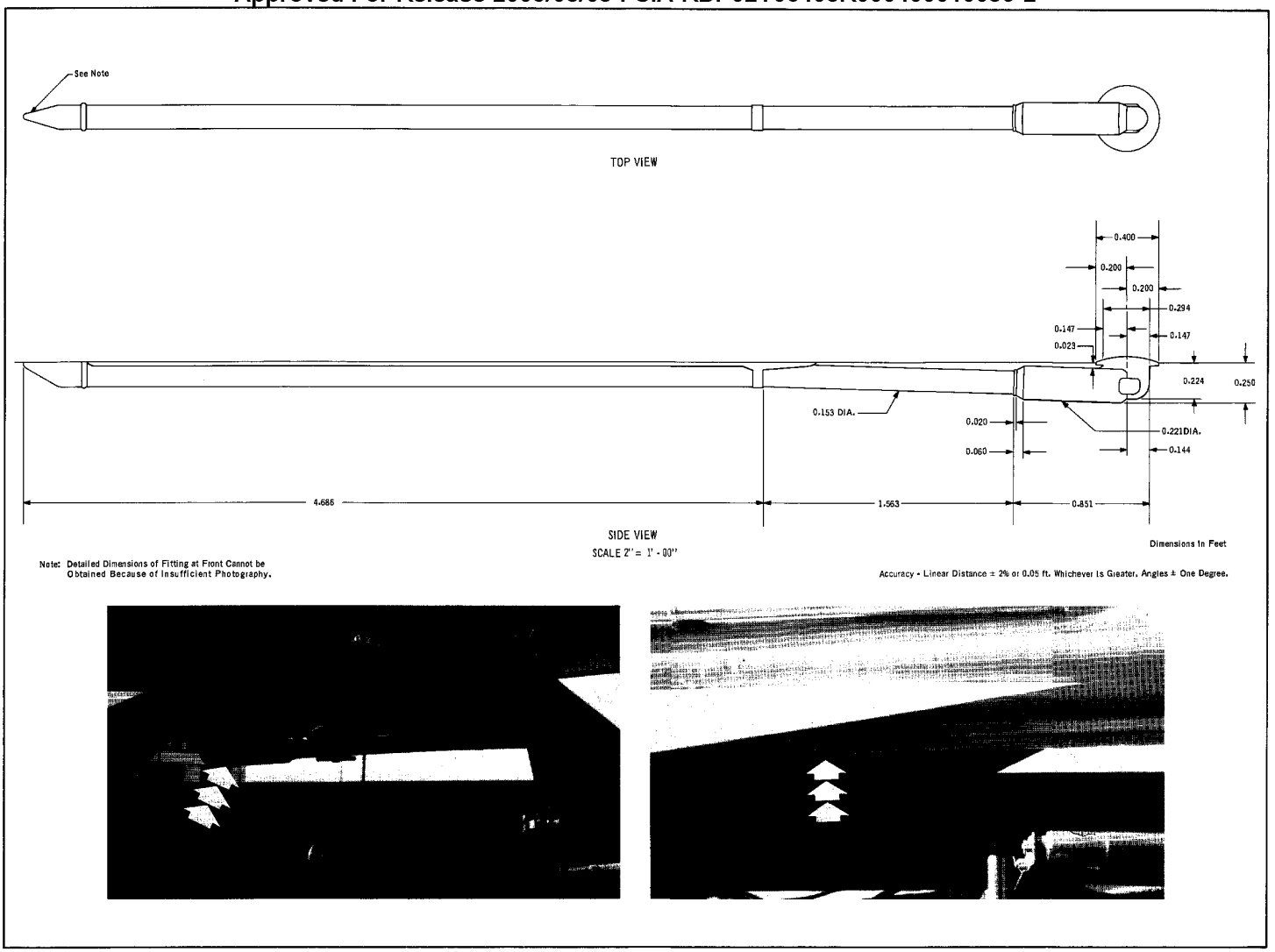

FIGURE 15. GUIDELINE MOD 4, PROBABLE FUEL LINE

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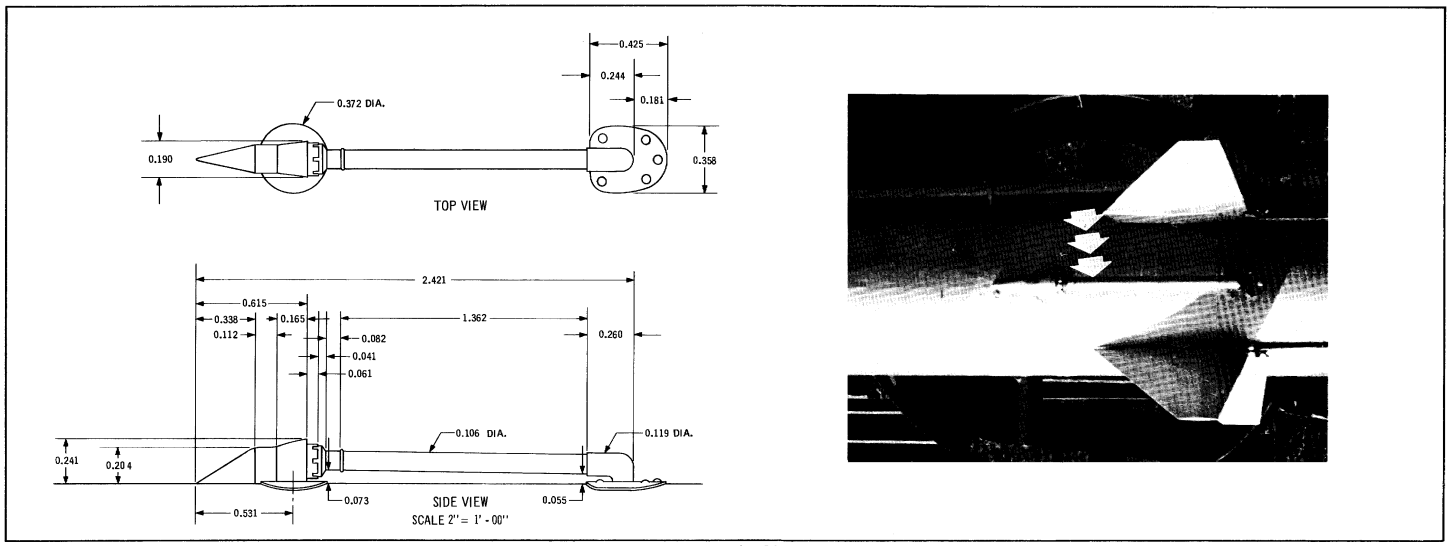

FIGURE 16. GUIDELINE MOD 4, PROBABLE FUEL LINE.

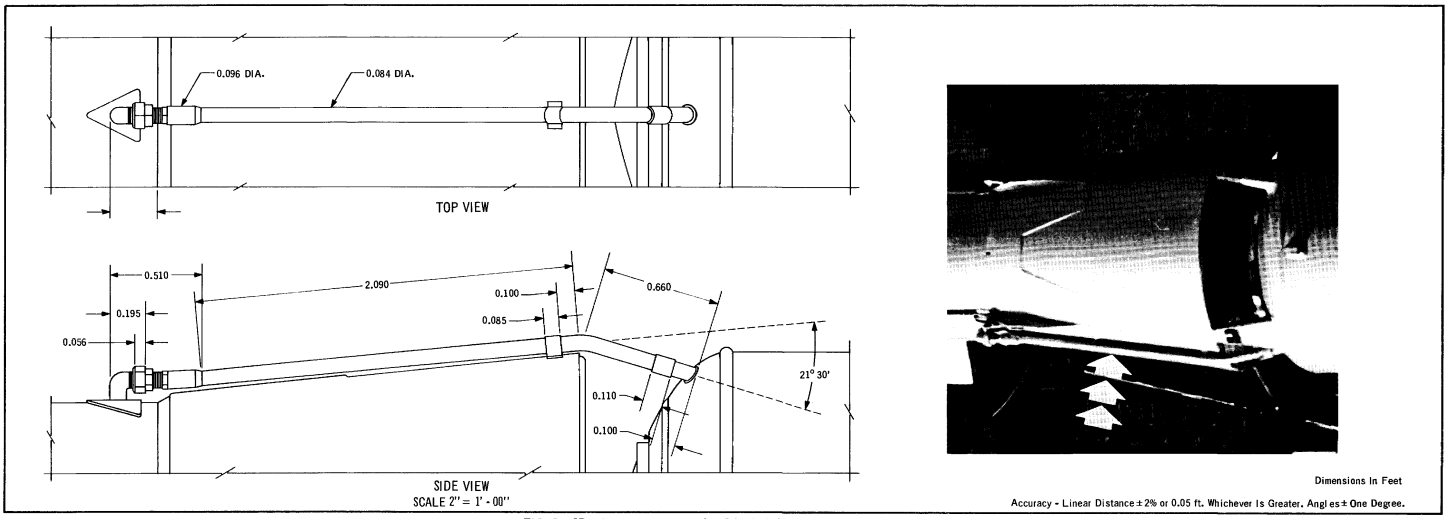

FIGURE 17. GUIDELINE MOD 4, PROBABLE HOT GAS BLEED LINE.

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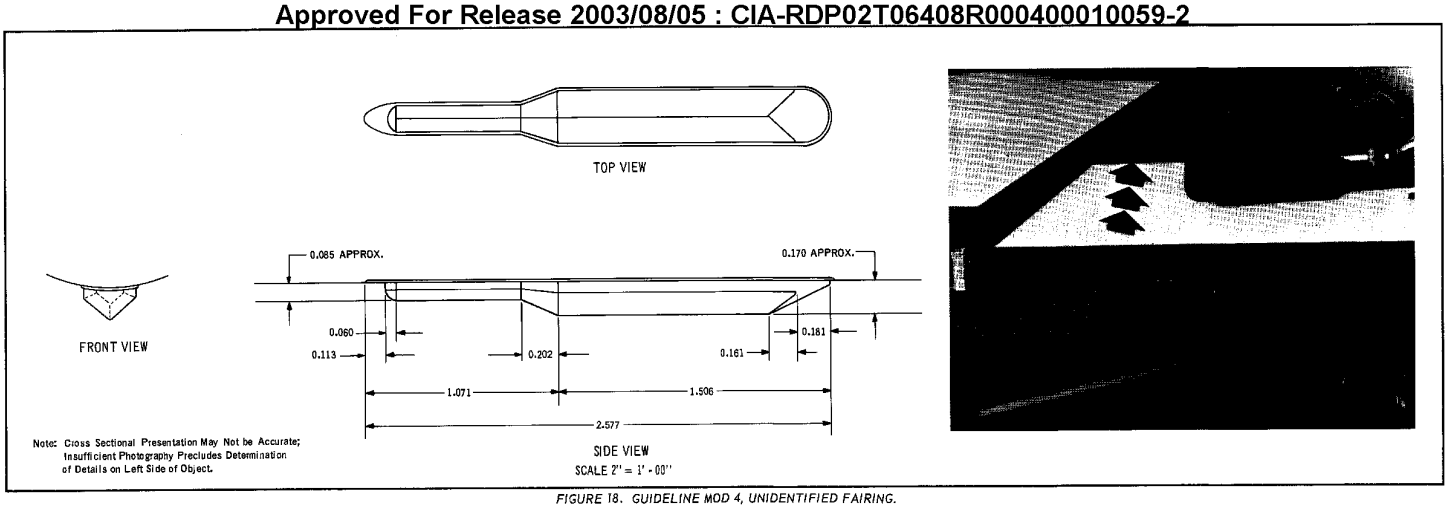

FIGURE 18. GUIDELINE MOD 4, UNIDENTIFIED FAIRING.

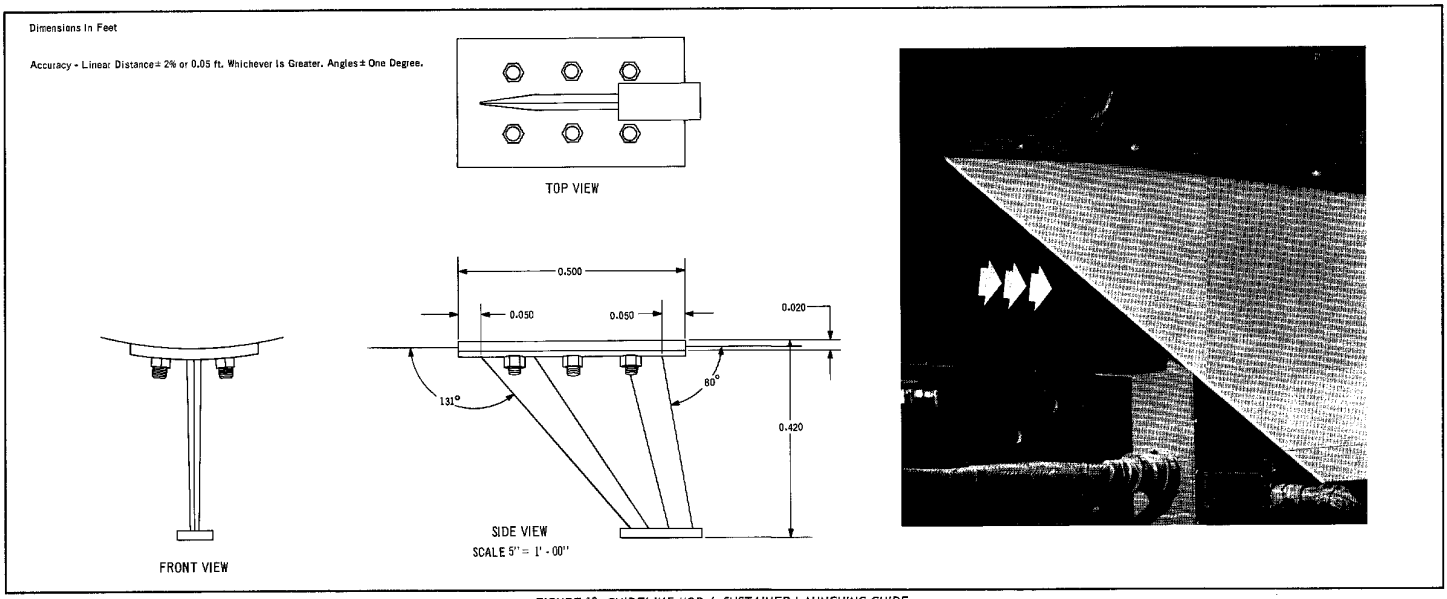

FIGURE 19. GUIDELINE MOD 4, SUSTAINER LAUNCHING GUIDE.

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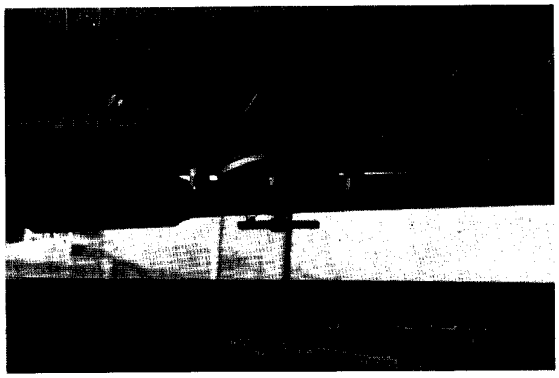
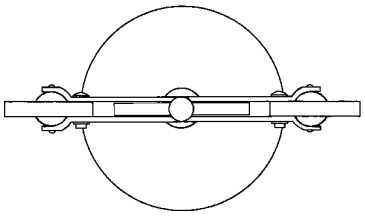
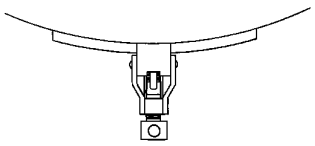
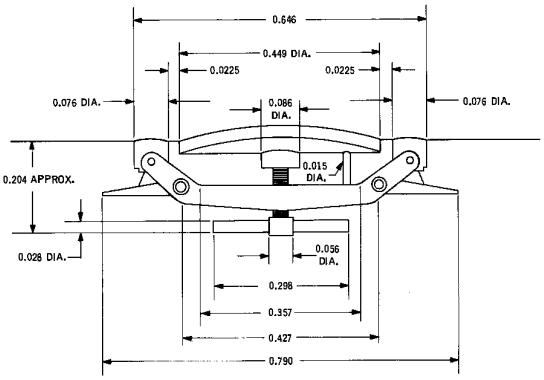




TOP VIEW



FRONT VIEW



SIDE VIEW
SCALE 5" = 1' - 00"

Dimensions In Feet

Accuracy - Linear Distance ± 2% or 0.05 ft. Whichever Is Greater. Angles ± One Degree.

FIGURE 20. GUIDELINE MOD 4, UMBILICAL DISCONNECT COVER.

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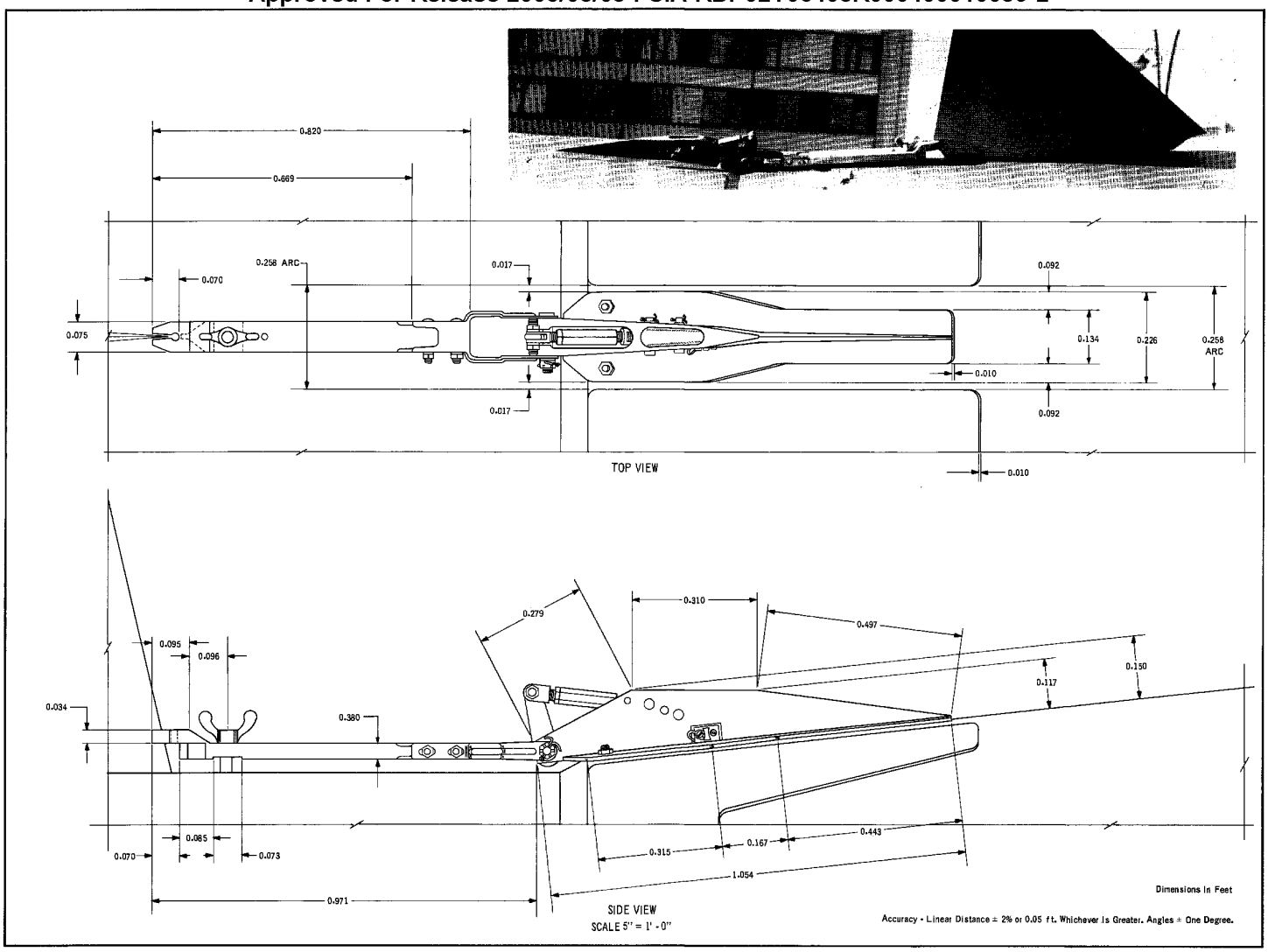

FIGURE 21. GUIDELINE MOD A CONTROL FIN LOCKING DEVICE

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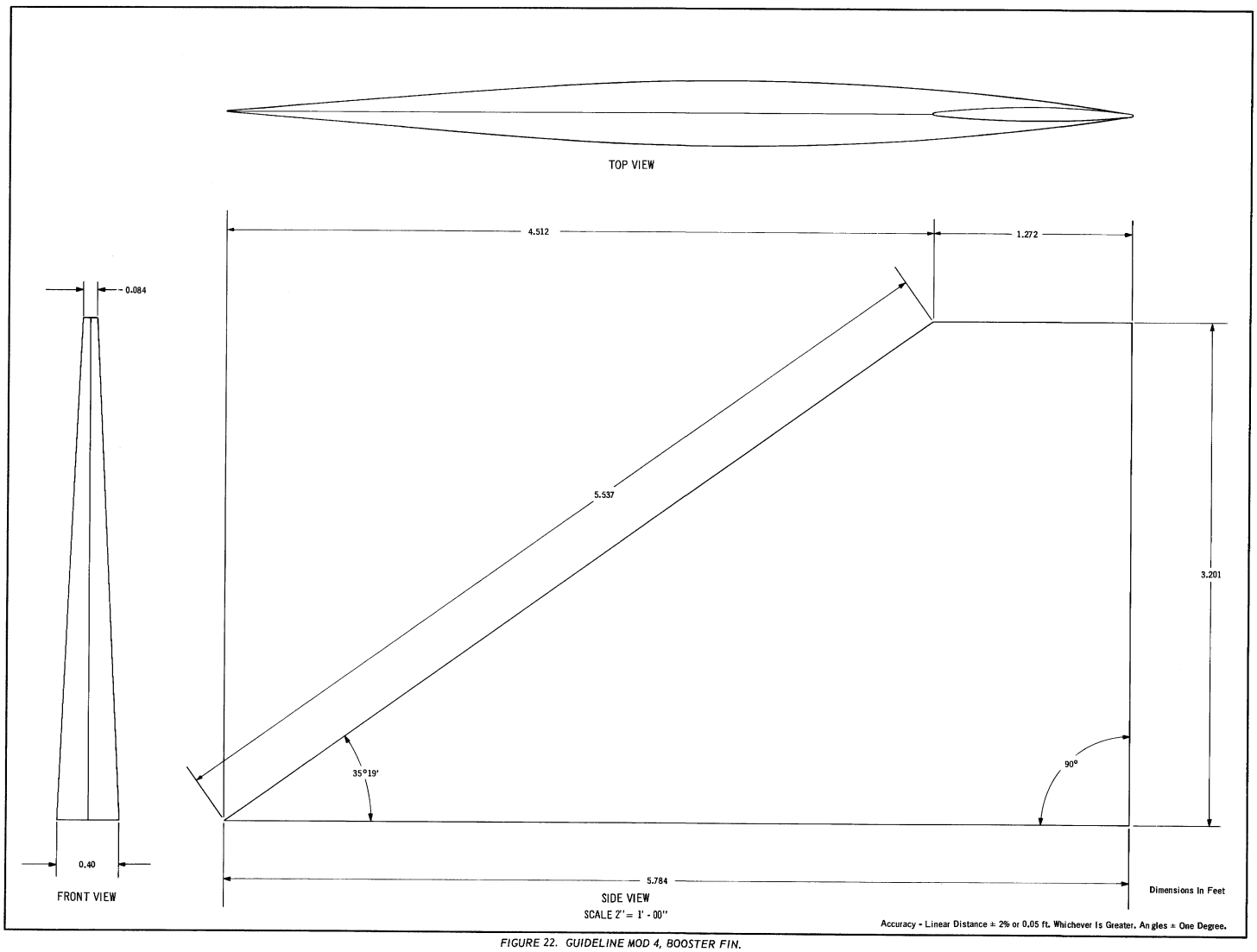

FIGURE 22. GUIDELINE MOD 4, BOOSTER FIN.

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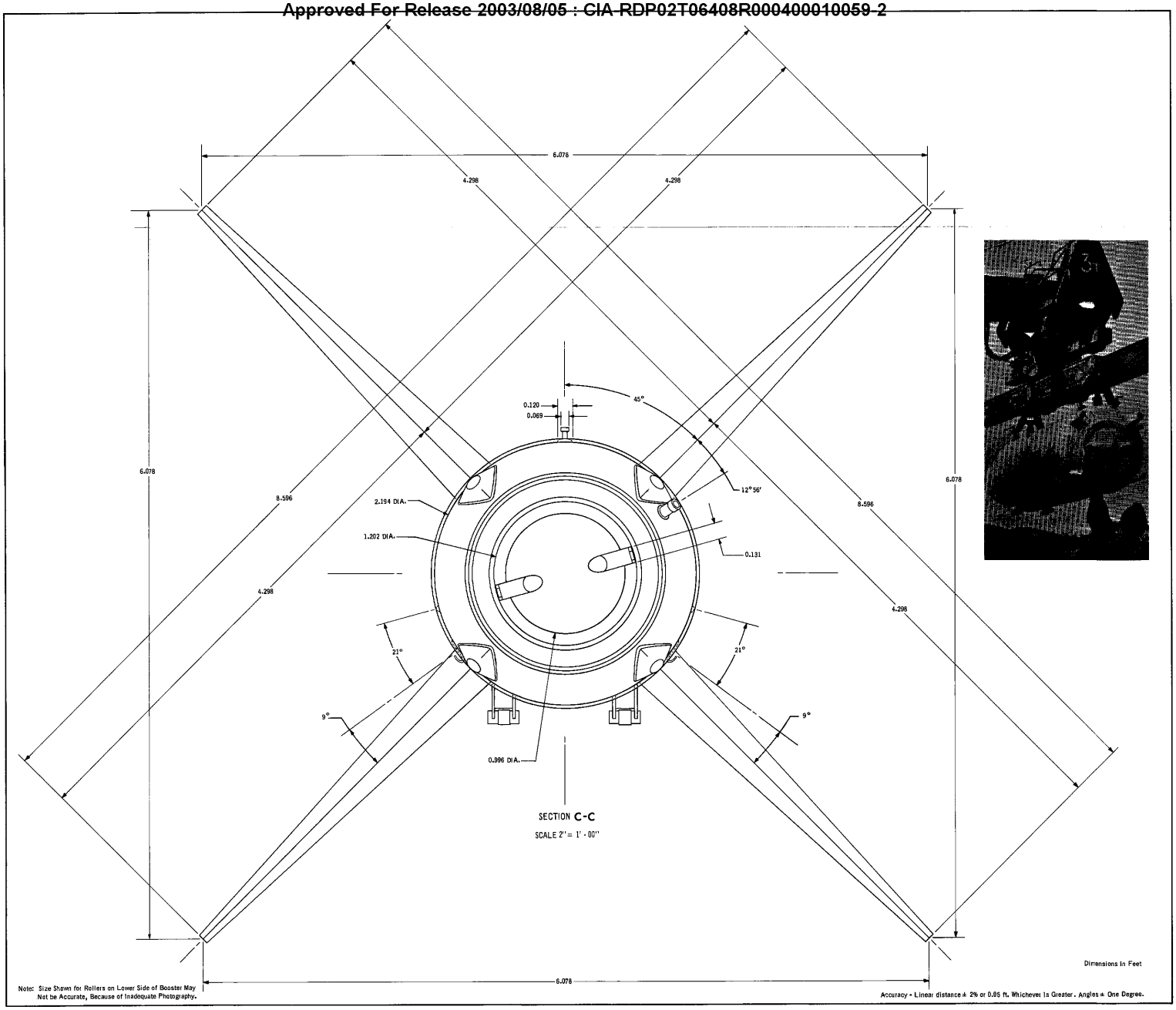

FIGURE 23. GUIDELINE MOD 4 BOOSTER FRONT VIEW.

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25X1

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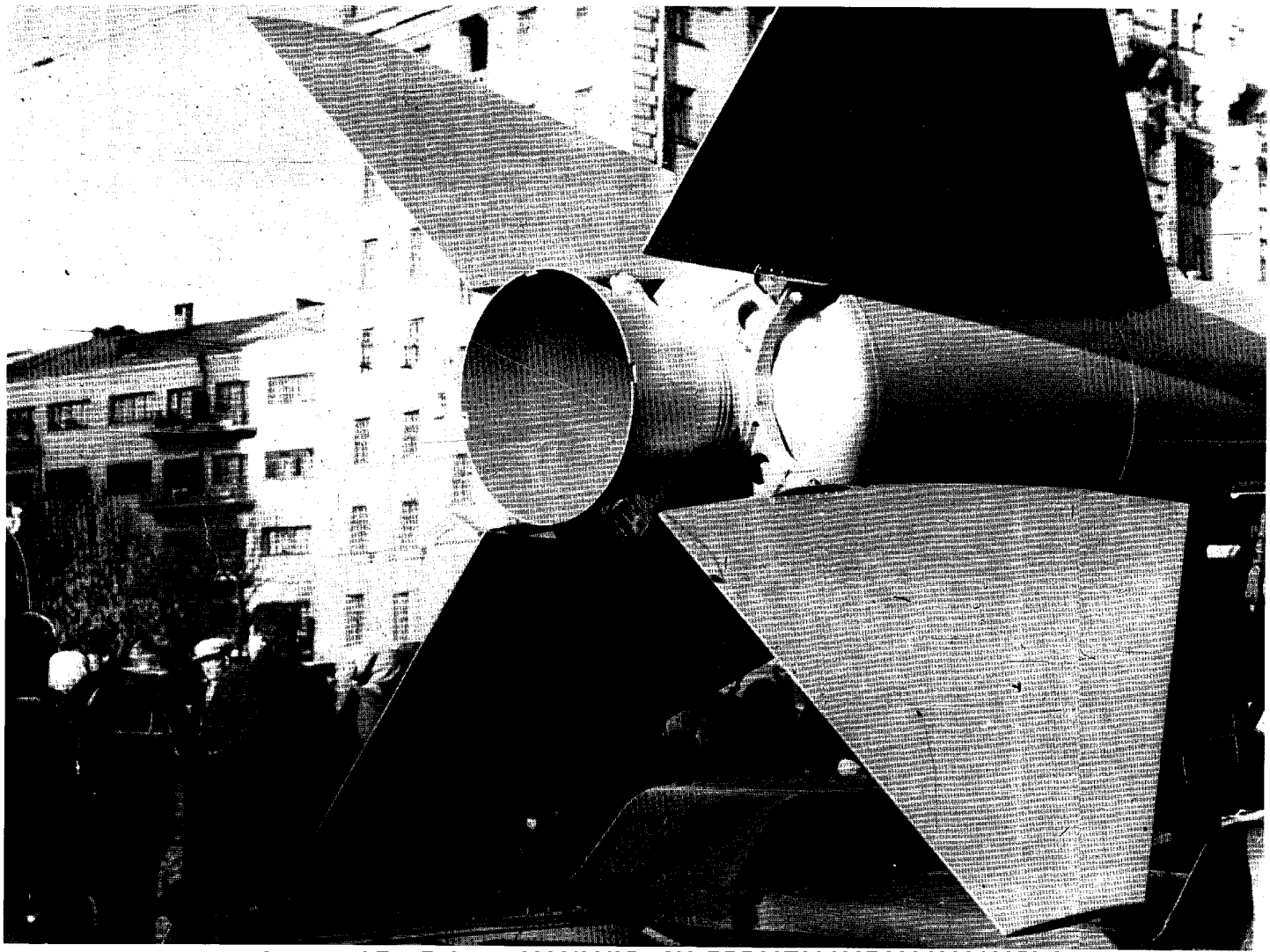

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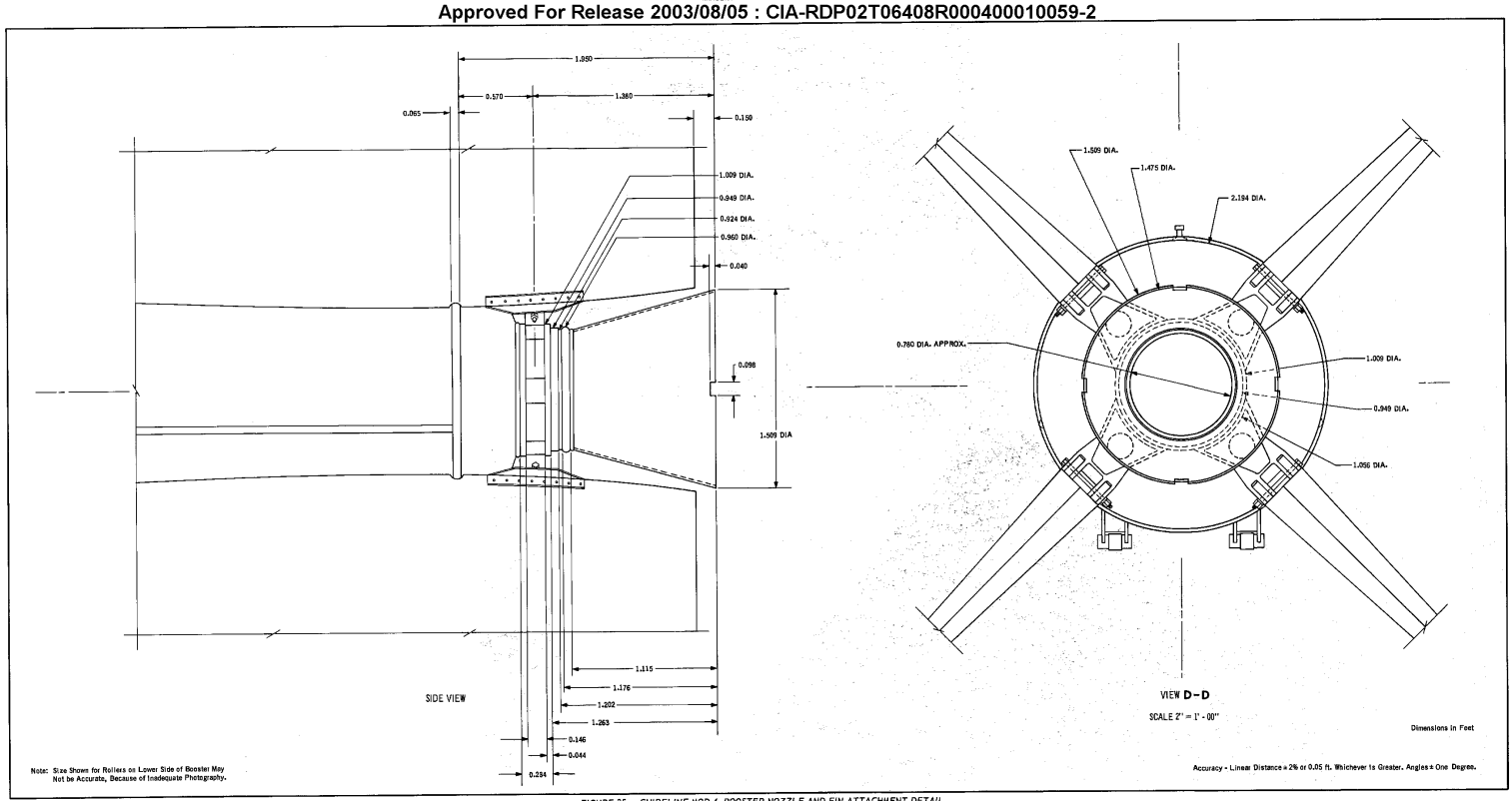

FIGURE 25. GUIDELINE MOD 4 BOOSTER NOZZLE AND FIN ATTACHMENT DETAIL

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